REMARKS

Claims 4-6, 8, and 9 are currently active. Claim 11 remains in the case but has been withdrawn pursuant to the earlier restriction requirement, now made final.

Entry of this response after final is respectfully requested. Entry of this response is necessary to clarify Applicants' definition of the term "α-amino amino" as used in the present application. The amendment to the specification presented herein was not presented earlier because the Office did not state in the first Office Action its view that the term "α-amino acid" also encompassed "β-amino acid." As noted in the comments that follow, that was not Applicants' intent. As used herein, the term "α-amino acid" is to be given its customary meaning, namely an amino acid having one carbon atom (that is, the α-position carbon) between the amino-end and the carboxy-end of the molecule (or residue). Likewise, the term "β-amino acid" as used herein is to be given its customary meaning, namely an amino acid having two carbon atoms (the α-position carbon and the β-position carbon) between the amino-end and the carboxy-end of the molecule (or residue). The two terms are mutually exclusive. Applicants explicitly state on the record that their definition of "α-amino acid" does not encompass "β-amino acids." The above amendment to the specification is believed to settle this discrepancy.

Favorable reconsideration is respectfully requested.

Rejection of Claims 4-6, 8, and 9 Under 35 USC §101 (Utility) & §112, First Paragraph (Enablement):

Applicants respectfully traverse these two rejections. Because the rejection under §112, first paragraph is predicated entirely upon the rejection under §101[1], these two rejections will be addressed simultaneously.

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[1]With respect to the enablement rejection, the Office states only that "[S]ince the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility... one of skill in the art clearly would not know how to use the claimed invention." See page 5 of the Final Office Action.

In response to the Office's comments at page 2 of the Final Office Action, Applicants respectfully submit that the Office has misconstrued Applicants' prior remarks. Specifically, Applicants **did not** state or imply that the "compounds have utility **because**" they have fewer degrees of freedom in solution compared to naturally-occurring polypeptides and will adopt a more limited number of conformations (see the Final Office Action at page 2, lines 12-15 and page 21 of Applicants' prior response). Applicants were pointing out, in response to the Office's original comments, that the claimed compounds exhibit a **specific** quality, namely a conformationally-restricted structure, that **is not** shared by natural α-polyeptides:

> All of the compounds recited in the present claims contain at least two cyclically-constrained β- and/or γ-amino acid residues. These compounds will not adopt the same conformations as naturally-occurring α-polypeptides because they are constrained in a fashion not found in naturally-occurring polypeptides. Nor are the conformations adopted by the present compounds exhibited by all compounds or all proteins/polypeptides in general. To be scrupulously precise, the presently claimed compounds will adopt a more limited number of conformations than the analogous α-polypeptides. This is due to the rotational constraints imposed by placing the backbone carbon atoms into a cyclic moiety.

(See page 21 of Applicants' prior response, 3rd full paragraph.) The point Applicants were trying to make was that while the claimed compounds are peptide mimetics, their **unique physical structure** yields chemical activities that are **specific** to the claimed compounds. In short, the range of conformations that can be adopted by the claimed compounds **are not** exhibited by all compounds, nor even all polypeptides.

The utility of the present compounds is both clearly articulated in the specification **and** corroborated by the Seebach paper, and Exhibits B, C, and D, submitted herewith. On this point, Applicants respectfully point out that the critical elements of §101 as set forth in the MPEP are in the alternative: Applicants may rely upon an asserted utility **or** a well-established utility. MPEP §2107.01(II) explicitly dictates that if there is a well-established utility for the claimed invention, Applicants are entitled to provide evidence of that well-established utility and to rely upon it. Moreover, Applicants are entitled to rely

upon alternative utilities, and only one credible utility is required to pass muster under §101. (See *In re Gottlieb*, 140 USPQ 665 (CCPA 1964).

In their earlier response, Applicants cited to pages 19 and 20 of the specification to support the utility of the claimed compounds. Applicants respectfully note that the quoted passage actually articulated three (3) distinct utilities:

> The subject compounds find use as peptide mimetics that are not easily degraded by the action of proteolytic enzymes. Thus, the cyclically-constrained peptides of the present invention can be used [*in vitro*, *in vivo* and *ex vivo*] as probes to explore protein-protein interactions.

See the specification at page 19, bottom. This utility is **specific** to the claimed compounds because virtually all natural α-peptides are degraded (to greater or lesser extent) by the action of proteases, while the subject compounds are unnatural and contain cyclically-constrained residues. Thus their utility as peptide mimetics is not shared by other compounds. The utility is **substantial** because non-degradable peptide mimetics allow protein-protein interactions to be explored without having to worry about, or to account for, the proteolytic degradation of the probe. The utility is **credible** as evidenced by the Seebach paper, cited earlier.

With respect to the Seebach paper, the Office states, without further explanation, that "Seebach does not provide utility for Applicants' invention at the time of Applicants' filing." See page 5 of the Final Office Action, last paragraph. Applicants respectfully disagree and ask why not?

If the Office is basing its decision solely on the date of the Seebach paper, Applicants respectfully submit that Office is elevating form over function. While the Seebach et al. paper is not prior art to the present application, the paper was submitted to the publisher less than one month after the earliest claimed priority date of the present application, and the paper appeared **prior to** the actual filing date of the present application. Thus the Seebach paper is very closely contemporaneous in time with the present application. (See also the discussion of Exhibits B, C, and D, below.)

Moreover, and Contrary to the Office's characterization, the utility articulated in Seebach paper is **exactly the same** as the utility articulated in the present application as

filed. In short, in the Seebach et al. paper, a non-cyclically-constrained, gamma-amino acid dipeptide was fabricated and tested for its ability to mimic binding interactions between two proteins: (1) the gamma-dipeptide the Seebach et al. fabricated and (2) five different human somatostatin receptors ($hsst_1$, through $hsst_5$). Some of the compounds worked quite well, others did not. See the very first paragraph of the Seebach et al. paper and Seebach's Table 1.

The second utility provided in the specification is to build compound libraries having a specific type of structure diversity that is **specific** to the recited compounds:

> One highly useful aspect of the invention is that because the backbone is heterogenous, a portion of the residues, such as the α-amino acids, provide functional diversity (thus allowing many different types of reactions in many different types of environments to be explored), while the cyclically-constrained residues provide conformational specificity and stability. For example, massive diversity can be obtained using commercially-available α-amino acids as building blocks, while structural rigidity is conferred by using only a single type of rigidified (*i.e.*, cyclically-constrained) β- or γ-amino acid.

See page 19, second full paragraph of the specification. Again, this utility is **specific** to the claimed compounds because of their structure. The claimed compounds comprise cyclically-constrained residues and α-amino acid residues. The utility is **substantial**: Combining α-amino acid residues with constrained β-amino acid residues enables the creation of a diverse peptidomimetic library that cannot be duplicated by any other genus of compounds. The utility is **credible**: elucidating structure-function relationships via a compound library is unquestionably a useful endeavor (see below).

The third utility it based on the size of the compounds, and thus their ability to disrupt protein-protein interactions. In short, the presently claimed compound can be quite large. As noted in the specification, the ability to disrupt specific protein-protein interaction has proven difficult with smaller molecules:

> With particular focus on protein-protein interactions, it has long been a goal of biological scientists to disrupt specific protein-protein interactions as a means to explore the nature of the interaction. This goal has proven difficult to achieve using traditional small molecules. Binding size is likely

part of the problem. Protein-protein complexes generally involve relatively large molecular surfaces. This makes it difficult for a small molecule to bind competitively at such a site. The present compounds, however, are polyamides and can be quite large. Thus, as a class, these compounds, individually and in the form of large libraries of compounds, are much better suited for probing protein-protein interactions than are small molecules.

In the same fashion as the utilities noted earlier, the utility of a chemical library comprised of the subject compounds is specific, substantial, and credible. Chemical libraries are articles of commerce - they can be purchased commercially, both now and well before the earliest filing date of the present application. See, for example, Exhibits B, C, and D, attached hereto. These three Exhibits are screen shots from the chemical library companies ChemBridge Corporation (San Diego, California), NanoSyn Corporation (Menlo Park, California), and ActiMol (Newark, Delaware). All three companies sell chemical libraries for drug discovery and other purposes. Of particular note is Exhibit B, which includes a brief history of ChemBridge. This company has been making and selling chemical libraries in the United States since 1993. Applicants respectfully submit that Exhibits B, C, and D clearly demonstrate a well-established utility for chemical libraries, a utility explicitly stated in the present application. (See the quote directly above.)

Applicants therefore respectfully submit that the application as filed, as well as the relevant prior art, also establishes a specific, substantial and credible utility for compounds now claimed. Applicants therefore submit that the rejection of the claims under §101 and §112, first paragraph (enablement) is improper. Withdrawal of the rejection is respectfully requested.

Rejection of Claims 4-6, 8 and 9 Under §112, First Paragraph, Written Description:

Applicants submit that this rejection has been overcome, in part, by appropriate amendment to the specification, and is, in part respectfully traversed.

Applicants submit that this rejection has been overcome, in part, by amending the definition of "α-amino acid." Specifically, at page 10 of the Final Office Action, the Office has taken the position that Applicants' original definition of "α-amino acid" is

sufficiently broad to encompass β-amino acids such as β-lysine. Applicants have therefore amended their definition of the term "α-amino acid" to make it clear that this term **does not** encompass β-amino acids.

For the record, Applicants explicitly take the position that the term "α-amino acid" as used herein is to be given its customary meaning, namely an amino acid having one (1) backbone carbon atom (that is, the α-position carbon) between the amino-terminus and the carboxy-terminus of the molecule (or residue). Likewise, Applicants explicitly take the position that the term "β-amino acid" as used herein is to be given its customary meaning, namely an amino acid having two (2) backbone carbon atoms (the α-position carbon and the β- position carbon) between the amino-terminus and the carboxy-terminus of the molecule (or residue). Applicants explicitly state on the record that their definition of "α-amino acids" **does not** encompass "β-amino acids." The two terms as used herein are mutually exclusive.

Applicants also believe this change overcomes the Office's comments at the top of page 9 of the Office Action. Specifically, the Office has unequivocally stated that "methods of making peptides are well known in the art, and the specification provides synthesis of multimers in the Examples." (Final Office Action, page 8, last two lines.) The Office goes on to state that "the written description for a genus can be achieved by a representative number of species within a broad [genus]." (Final Office Action, page 9, lines 1-2). The Office then concludes that the specification lacks a "sufficient variety of species" to reflect the variance in the genus, further noting:

> particularly given the definition of α-amino acids as 'any and all natural and unnatural α-amino acids [and].. synthetic variations, derivatives, and analogs thereof,' and the specification provides no definitions or examples of 'variations, derivatives, and analogs.'

(See page 9, first full paragraph of Final Office Action.) Applicants submit that this portion of the rejection has been overcome by the amendment to the specification. Applicants have explicitly stated on the record that α-amino acids **do not** encompass β-amino acids. Applicants have also amended the specification to delete entirely the phrase

"synthetic variations, and analogs thereof." As the specification now stands, "α-amino acids" are described as follows:

> The term "α-amino acid" thus encompasses, without limitation, alanine, arginine, asparagine, aspartic acid, cysteine, glutamine, glutamic acid, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, proline, serine, threonine, tryptophan, tyrosine, and valine. Illustrative α-amino acids also include analogs such as N-methylated α-amino acids, hydroxylated α-amino acids, and the like. An exemplary list of modified or unusual α-amino acids that can be used in the present invention include (without limitation): N-alkyl α-amino acids (such as N-methyl glycine), hydroxylysine, 3-hydroxyproline, 4-hydroxyproline, nor-valine, nor-leucine, ornithine, and the like.

See the above amendment to pages 15 and 16 of the specification. Therefore, Applicants submit that this portion of the rejection has been overcome.

Applicants explicitly and strenuously **traverse** the statement at page 6, third full paragraph of the Office Action. Applicants **did not** admit or even imply that the presently claimed compounds have no biological function. On this point, Applicants respectfully submit that the Office has very seriously misconstrued Applicants' prior comments.

In particular, Applicants respectfully point out that the word "biomolecule" was the word used by the Office and the MPEP, not by the Applicants. That is why Applicants specifically placed the word "biomolecules" in quotations at page 26, line 8 of their prior response. See also the second to last line of page 9 of the prior Office Action. The MPEP section cited by the Office in the prior Office Action (at page 9) is directed to **naturally-occurring compounds** (that is "biomolecules" as both the Office and the MPEP use that word). The point Applicants made in their prior comments was that the presently recited compounds **are not** naturally-occurring compounds. They **are not** "biomolecules" as the Office clearly used that word. That statement is vastly different from the Office's allegation that Applicants admitted that the claimed compounds "have no biological function." Applicants **did not** make such an admission.

In re-reading Applicants' prior comments, it appears that the Office disregarded the critical word "corresponding" in Applicants' comments. Applicants' prior comments bear

repeating here to clarify the issue. At page 27, first full paragraph of Applicants' response dated August 4, 2005, Applicants wrote (emphasis added):

> Additionally, the discussion at the bottom of page 9 and extending to the top of page 10 of the Office Action regarding "biomolecules" that are described only by functional characteristics and a method of obtaining a claimed sequence is irrelevant because that discussion from MPEP 2163 **clearly applies to naturally-occurring molecules isolated from nature**, such as cDNAs and the like. The relevant and complete quote from MPEP 2163 reads as follows:
>
> > *The claimed invention as a whole may not be adequately described where an invention is described solely in terms of a method of its making coupled with its function and there is no described or art-recognized correlation or relationship between the structure of the invention and its function. A biomolecule sequence described only by a functional characteristic, without any known or disclosed correlation between that function and the structure of the sequence, normally is not a sufficient identifying characteristic for written description purposes, even when accompanied by a method of obtaining the claimed sequence. For example, even though a genetic code table would correlate a known amino acid sequence with a genus of coding nucleic acids, the same table cannot predict the native, naturally occurring nucleic acid sequence of a naturally occurring mRNA or its corresponding cDNA.*
>
> **The presently compounds have no corresponding biological function; they have no corresponding "genetic code."** The presently claimed compounds are not products of nature. They are not "biomolecules" as that term is used in MPEP 2163. Rather, the claimed compounds are "unnatural polypeptide compounds," as is positively recited in the preambles to Claims 4 and 6. Thus, the above-quoted passage from MPEP 2163 is inapposite to the present claims.

Applicants **did not** state or imply that the claimed compounds have no biological function (as alleged by the Office). Applicants explicitly stated that the presently claimed compounds have "no **corresponding** biological function; they have no **corresponding** genetic code." Applicants' only point was to show that the Office's reliance on MPEP § 2163 is misplaced because this section of the MPEP applies only to **naturally occurring nucleic acids** and their **corresponding** encoded polypeptides. In short, the above-quoted

section of the MPEP addresses an instance where an applicant is trying to claim an unknown DNA sequence based solely on the known sequence of the encoded polypeptide. But that's not the case here. Applicants are claiming unnatural polypeptide compounds whose synthesis and utility are clearly described in the specification as filed. As Applicants noted in their prior response, this passage of the MPEP is irrelevant to the issue of written description because the claimed compounds are positively recited as "unnatural polypeptide compounds." In short, Applicants were simply pointing out the fact that there is no genetic code for the present compounds. Therefore the Office's citation to MPEP 2163 is inapposite.

Applicants therefore explicitly traverse this portion of the rejection because it improperly construes Applicants' prior comments. Applicants did not admit, nor imply, that the claimed compounds have no biological function.

The presently claimed compounds are unnatural chemical compounds. The compounds are synthesized in the form of individual amino acid building blocks. These blocks are then linked (preferably using solid-phase peptide synthesis) to yield the claimed compounds. Thus, the written description requirement is satisfied where the specification describes how to fabricate a representative sampling of the individual amino acid building blocks and how to link the amino acid building blocks into the claimed compounds. The Office has taken the position that "the specification lacks a sufficient variety of species to reflect" the scope of the claims. (See Final Office Action, page 9, first full paragraph.) Applicants traverse this finding and provide the following facts:

The claims are drawn to isolated, unnatural, polypeptide compounds. The compounds are comprised of α-, β-, and γ-amino acid residues. The claims positively require that a least one of the X or Z moieties comprise an α-amino acid moiety, and that at least another two of X or Z moieties comprise two cyclically-constrained β-amino acids. See the first three paragraphs of Claim 4. The specification provides a vast disclosure of individual species falling within the claimed genus, and therefore satisfies the written description requirement of §112, first paragraph.

Focusing first on the individual building blocks required by the present claims, all of the claims require that the claimed compounds include at least one α-amino acid moiety. The specification recites, by name, no less than 27 distinct α-amino acids, including all of the naturally-occuring α-amino acids. See page 16, first paragraph of the application as filed.

All of the claims also require at least two cyclically-constrained β-amino acids. The specification as filed explicitly refers to four (4) issued U.S. patents that disclose polypeptides comprising β-amino acids of the exact same type recited in the present claims. See the first full paragraph of page 16 as amended, which refers to U.S. Patent Nos. 6,683,154; 6,710,186; and 6,727,368. See also page 21, line 10 of the specification as filed, where the fourth patent, U.S. Pat. No. 6,060,585 is also referenced. All of these patents were incorporated by reference into the subject application. See also the three amended paragraphs at page 21 of the application as filed. (See page 3 of Applicants' prior response.) Applicants note that because these four (4) documents are issued U.S. Patents, they are presumed to be valid for all purposes, including for purposes of §112, first paragraph. In short, the referenced patents describe β-amino acids of the type to be included in the claimed compounds, in a manner acceptable to the written description requirement of §112. Because the present specification incorporates these earlier U.S. Patents by reference, the present application likewise satisfies the written description requirement of §112, first paragraph.

The compounds may also include γ-amino acid residues. The specification as filed includes an extensive general discussion of how to make these residues starting at page 21, last paragraph, to page 30, line 25.

The specification also includes an extensive discussion on how to link the amino acid building blocks into the claimed compounds. For example, the discussion extending from page 32, line 18, to the top of page 35, contains a very detailed disclosure of using **solid-phase** peptide synthesis to link the individual amino acid building blocks. See also the illustrative reaction schemes shown at page 42, line 10, to page 44, line 20 for a further written description of the solid-phase synthetic route. Starting at page 35, line 5,

the specification also provides a clear description, including a fully detailed reaction scheme, for accomplishing the same goal via **solution-phase** peptide synthesis. See also the illustrative reaction schemes shown at page 39, line 12, to page 42, line 8, for a further written description of the solution-phase synthetic route. Thus the specification discloses two distinct routes for linking the amino acids into the claimed compounds.

Starting at page 36, line 18, the specification also includes a description of how to add substituents to the cyclic moiety in the cyclically-constrained residues.

At page 44, line 25, to the bottom of page 47, the specification includes an entire section, including detailed reaction schemes, on how to fabricate heterogeneous oligomers that contain at least two constrained β-amino acid residues and an aromatic moiety.

At pages 48-50, the specification includes an entire section devoted to how to fabricate heterogeneous oligomers that contain at least two constrained β-amino acid residues and an α-amino acid moiety.

Starting at page 55, and extending all the way to page 116, the specification includes an intricately detailed description of a host of working examples. (Note that §112, first paragraph does not require a single working example to be met.) The Examples present, in step-by-step fashion, a complete exposition on how to make the required amino acid building blocks, and how to link them into the claimed compounds. Not a single step is omitted, including step-by-step linking reactions, full reaction schemes, all reagents required, yields, melting points, NMR spectra, and mass analysis spectra.

In particular, the Office's attention is directed to the series of compounds described starting at page 88 of the application as filed. Here, the inventors made and characterized compounds according to the present invention using five (5) different cyclically-constrained β-amino acid residues, and seven (7) different cyclically-constratined γ-amino acid residues. The synthesis of these residues is set forth starting at the bottom of page 88, to page 90, including a fully detailed reaction scheme.

The Office's citation to *In re Wilder* 222 USPQ 369 (Fed. Cir. 1984) at page 9, second full paragraph of the Final Office Action is explicitly traversed as being inappropriate on the facts. (A copy of the *Wilder* case is attached hereto as Exhibit A for

the Examiner's convenience.) The *Wilder* case simply is not analogous to the present situation. The *Wilder* case dealt with a reissue application wherein the original application disclosed a "synchronous scanner," while the reissue application included claims to an "**a**synchronous scanner." The *Wilder* case addressed a set of facts where the applicants failed entirely to describe the claimed invention **and** admitted the same on the record.

Neither fact is operating in the present application. Applicants have provided more than 50 pages of working examples of the claimed invention and Applicants have continuously maintained that the claimed invention is adequately described in the specifcation. As evidenced by the very lengthy specification, citations to relevant earlier U.S. Patents, and the wealth of working examples, the present Applicants have provided an exhaustive written description of the claimed compounds.

While the facts of *Wilder* do not match those at issue here, Applicants do note that the **legal** standards set forth in the *Wilder* case actually support the Applicants' position. *Wilder* clearly establishes that the written description requirement **does not** require the claimed subject matter to be described identically in the specification. Rather, the disclosure most only convey to those skilled in the art that the applicant had invented the subject matter that is claimed. Precisely how close the claims and the specification must match for purposes of the written description requirement is evaluated on a case-by-case basis. *In re Wilder*, 222 USPQ at 372.

Applicants respectfully conclude that the extensive written description contained in the application as filed provides ample information to convey to an ordinarily skilled chemist that the present inventors were in possession of the compounds now claimed.

In light of the amendment to the definition of "α-amino acids," and further in light of the above comments, Applicants respectfully submit that the rejection of the claims under §112, first paragraph, has been overcome. Withdrawal of the same is respectfully requested.

Rejection of Claims 4-6, 8, and 9, 12 and 14 Under 35 USC §102(b) in View of "Appella-2," (Appella et al. (1999), "Formation of Short, Stable Helices in Aqueous Solution by β-Amino Acid Hexamers," *J. Am. Chem. Soc.* 121:2309-2310):

This rejection is believed to have been overcome by appropriate amendment to the specification. In short, the Applicants did not intend to have the term "α-amino acid" encompass "β-amino acid." (Because the application as filed contains separate definitions for the terms "α-amino acid" and "β-amino acid" [see page 15, line 27, to page 16, line 21], Applicants respectfully submit that their intentions are clear.)

That being said, the Office explicitly states, at the bottom of page 11 of the Final Office Action, that Applicants' definition of "α-amino acid" is sufficiently broad to encompass a β-lysine residue. Applicants have therefore amended their definition of the term "α-amino acid" to make it clear that this term does not encompass β-amino acids.

For the record, Applicants explicitly take the position that the term "α-amino acid" as used herein is to be given its customary meaning, namely an amino acid having one backbone carbon atom (that is, the α-position carbon) between the amino-end and the carboxy-end of the molecule (or residue). Likewise, Applicants explicitly take the position that the term "β-amino acid" as used herein is to be given its customary meaning, namely an amino acid having two backbone carbon atoms (the α-position carbon and the β-position carbon) between the amino-end and the carboxy-end of the molecule (or residue). Applicants explicitly state on the record that their definition of "α-amino acid" does not encompass "β-amino acid," The two terms are mutually exclusive. The above amendment to the specification is believed to clarify this point.

With that understanding in mind, this rejection is respectfully traversed because: (1) the structure drawn at page 11 of the Final Office Action does not include an α-amino acid residue; and (2) the term "α-acid residue" as used in the present application does not include β-amino acid residues. Thus the Appella et al. paper does not disclose any of the compounds positively recited in the present claims.

All of the present claims require that at least one of the X or Z residues comprises an α-amino acid residue. As that term has been defined herein, an α-amino acid residue

does not encompass the β-amino acid residues shown in the compound presented at page 11 of the Final Office Action. Because the Appella et al. reference does not include any compounds that have an α-amino acid residue, it is respectfully submitted that this rejection is improper.

In particular, see the passage at page 2309 of the Appella et al. paper, right-hand column, end of the first full paragraph:

> We then prepared a series of hexa-β-peptides, 1-4, with varying proportions of cyclohexyl and **acyclic β-amino acid residues**. The acyclic residues were synthesized from the corresponding D-α-amino acids (ornithine, phenylalanine, or valine) by the elegant Seebach method [citation omitted; emphasis added].

A close examination of compounds 1-4 shown in the Appella et al. paper reveals that the acyclic residues in each of compounds 1-4 is a β-Lys residue (which is also accurately shown in the structure the Office provided at page 11 of the Final Office Action). Thus, none of compounds 1-4 of Appella et al. include an α-amino acid residue. An α-amino acid residue is positively recited in all of the now-pending claims.

For this reason, Applicants respectfully submit that the rejection of Claims 4-6, 8, and 9 over Appella et al. is improper. Withdrawal of the rejection is requested.

CONCLUSION

In light of the above amendment and remarks, Applicants submit that the application is now in condition for allowance. Early notification of such action is earnestly solicited.

Respectfully submitted,

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I certify that this paper is being deposited with the U.S. Postal Service as First-Class Mail, postage-paid, in an envelope addressed to Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

Date: January 30, 2006

Signature:

In re Wilder et al., 222 USPQ 369 (CA FC 1984)

In re Wilder et al.

(CA FC)
222 USPQ 369

Decided June 20, 1984
No. 83-1360
U.S. Court of Appeals Federal Circuit

Headnotes

PATENTS

1. Reissue -- In general (§ 58.1)

Reissue oath or declaration must state that patent is defective or partly inoperative or invalid because of defects in specification or drawing, or because patentee has claimed more or less than he is entitled to; second, applicant must allege that defective, inoperative, or invalid patent arose through error without deceptive intent.

2. Reissue -- In general (§ 58.1)

Error provision of 35 USC 251 is to be liberally construed to permit correction of defects; attorney's failure to appreciate full scope of invention is one of most common sources of defects in patents; fact that error could have been discovered at time of prosecution with more thorough patentability search or with improved communication between inventors and attorney does not, by itself, preclude patent owner from correcting defects through reissue; where attorney's error was discovered after commercialization of invention and issuance of patent, and where application for broader claims was filed within two years after original patent issued, attorney's explanation of his error in misunderstanding scope of invention is sufficient to satisfy error requirement of 35 USC 251.

3. Reissue -- In general (§ 58.1)

Attorney's declaration that his error, misunderstanding scope of invention, arose because no prior art search was done and he assumed limitations were required by prior art, without justification, is sufficient explanation of how error arose to satisfy requirements of 37 CFR 175(a)(5).

4. Specification -- Sufficiency of disclosure (§ 62.7)

Description requirement of 35 USC 112 is separate from enabl hat provision; it is

not necessary that claimed subject matter be described identically, but that disclosure originally filed convey to those skilled in art that applicant had invented subject matter later claimed; precisely how close original description must come to comply with description requirement of Section 112 must be determined on case by case basis; inquiry into whether description requirement is met is question of fact.

5. Construction of specification and claims -- Broad or narrow (§ 22.101)

Subjective desire to claim as broadly as possible does not establish that broader invention being claimed in reissue application is adequately described in original patent.

6. Reissue -- In general (§ 58.1)

Objects of the Invention may, in some cases, provide support for claims sought through reissue.

Particular patents -- Tape Scanning Devices

Wilder, Whitney, and Matison, Instruction Indicating Apparatus for a Record and/or Playback Device, rejection of claims 1-16 reversed; rejection of claims 14-16 affirmed.

Case History and Disposition:

Page 369

Appeal from Patent and Trademark Office Board of Appeals.

Application for reissue of patent of Leslie N. Wilder, James C. Whitney, and Gary G. Matison, Serial No. 079,171 filed to reissue Patent No. 4,051,540. From decision rejecting claims 1-16, applicants appeal (Lanier Business Products intervenor). Affirmed in part and reversed in part.

Attorneys:
Gregor N. Neff, New York, N.Y. (William S. Frommer, New York, N.Y., and Melvin J. Scolnick, Stamford, Conn., of counsel) for appellants.

Thomas E. Lynch (Joseph F. Nakamura, and Jere W. Sears, on the brief) for Patent and Trademark Office.

Eugene S. Zimmer, Atlanta, Ga., for intervenor.

Judge:
Before Baldwin, and Kashiwa, Circuit Judges, and Nichols, Senior Circuit Judge.

Opinion Text

Opinion By:
Baldwin, Circuit Judge.

This appeal is from a decision of the United States Patent and Trademark Office Board of Appeals (board) rejecting claims 1-16 of appellant's Reissue Application Serial No. 079,171. Claims 1-16 were rejected for appellants' failure to sufficiently allege error required by 35 USC §251 and for failure of appellants' oath to meet the requirements of 37 CFR 1.175(a)(5). Claims 14-16 were also rejected as being drawn to subject matter not disclosed in the original patent, U.S. Patent

No. 4,051,540. We reverse the board's rejection of claims 1-16 for failure properly to allege error as required by the statute and regulation but affirm the board's rejection of claims 14-16 on the ground that the disclosure requirement has not been satisfied.

The Invention

The invention claimed in U.S. Patent No. 4,051,540 (the original patent) is a mechanism for indicating the location of information recorded on a dictating machine. A person speaking into a dictating machine indicates the location of instructions on a recording medium, such as a magnetic tape, by recording control tones at the beginning or end of the instructions. A person transcribing dictated information rewinds the tape in a transcribing machine. During rewinding, the transcribing machine scans the tape and detects control tones. The locations of detected tones are stored in an electrical circuit and lights appear on a linear array that correlate with the locations of control tones on the tape. After rewinding, the transcriptionist locates specific information by advancing the tape until an indicator aligns with a light in the array.

Claim 1 of the original patent is reproduced below:

> 1. Apparatus for indicating the location of particular information on a previously recorded record medium, said particular information being represented by predetermined recorded signals, comprising:
>
> scanning means for scanning said record medium;
>
> an array of selectively actuable light emitting sources;
>
> *indexing means for scanning said array of light emitting sources in synchronism with the scanning of said record medium, said indexing means being in actuating relation sequentially with each of said light emitting sources* ;
>
> detecting means for detecting the presence of said predetermined recorded signals during the scanning of said record medium to produce an actuating signal; and
>
> temporary storage means for temporarily storing said actuating signal until said indexing means is in actuating relation with an unenergized light emitting source to energize said light emitting source. [Emphasis added.]

Claims 1-13 of the Reissue application are the same as claims 1-13 of the original patent. Unlike the original claims, reissue claims 14, 15, and 16 do not require that lights be scanned "in synchronism with the scanning of said record medium." Accordingly, the original claims are directed to a species while the reissue claims are directed to the genus of indicating mechanisms that visually identify positions on

a recording medium when the recording medium is scanned.

Opinion

Error Rejections

The first order of business for the board and for this court is to determine whether appellants have satisfied the requirements of 35 USC §251 and 37 CFR 1.175. In re Clark, 522 F.2d 623, 625, 187 USPQ 209, 211 (CCPA 1975); In re Rowand, 526 F.2d 558, 559, 187 USPQ 487, 488 (CCPA 1975).

[1] The statute, 35 USC §251, provides, in pertinent part, that:

> Whenever any patent is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid, by reason of a defective specification or drawing, or by reason of the patentee claiming more or less than he had a right to claim in the patent, the Commissioner shall, on the surrender of such patent and the payment of the fee required by law, reissue the patent for the invention disclosed in the original patent, and in accordance with a new and amended application, for the unexpired part of the term of the original patent. No new matter shall be introduced into the application for reissue.

There are two distinct statutory requirements that a reissue oath or declaration must satisfy. First, it must state that the patent is defective or partly inoperative or invalid because of defects in the specification or drawing, or because the patentee has claimed more or less than he is entitled to. Second, the applicant must allege that the defective, inoperative, or invalid patent arose through error without deceptive intent. The applicants satisfied the first requirement by alleging less was claimed in the original patent than the patentee was entitled to claim. The only issue is whether error correctable through reissue was properly alleged.

The error alleged in the first declaration filed by the inventors was that:

> [t]he true scope of the invention disclosed in the patent was not fully appreciated by us or by our attorney * * * until the commercial success of the "Thought Master" record/playback device was found to be based, at least in part, on the linear array of fixed, selectively energizable light elements, each being selectively energized to
>
> Page 371
>
> provide a visual light mark in response to a detected predetermined signal, and each being associated with a respective length of record tape, which is provided in the electronic indicator incorporated in the said "Thought Master" record/playback device * * *.

The attorney who prosecuted the original patent stated in a declaration accompanying the reissue application:

> 3. That I did not fully appreciate the true nature and scope of the invention disclosed in the original application and thus did not prepare claims of broad enough scope to provide the patent protection to which the invention properly is entitled.
>
> 6. My failure to fully appreciate the true nature and scope of the invention disclosed in the original application was without fraudulent or deceptive intention, and arose from inadvertence, accident or mistake.

In a subsequent declaration, the attorney further elaborated on the cause of his error with the following

explanations:

> 7. The invention disclosed in said original application was incorporated into a dictating machine sold by the assignee of said patent under the trademark "Thought Master." When said patent issued, sales of this device had only recently begun. Subsequently, in the latter half of 1978, said assignee began marketing a modified version of a dictating machine, identified as the "Thought Master II" machine. Differences between these versions of the Thought Master dictating machines are described below.
>
> 8. In the summer of 1979, I conferred with James C. Whitney, the only one of the inventors still employed by the assignee, regarding the question of the scope of protection secured by said patent. Particularly, Mr. Whitney requested that I investigate the scope of said patent to determine if it adequately covered both versions of the Thought Master machine, and also if said patent adequately protected the broad invention disclosed therein from what Mr. Whitney believed to be possible attempts by competitors of the assignee who, in the future, might try to exploit said invention.
>
> 9. In accordance with Mr. Whitney's request, I investigated the claims of said patent in light of the prior art of which I then was aware. From my investigation, I concluded that said patent could support broader claims whose scope, broadly, is the combination of a linear array of fixed, selectively energizable light elements, each being selectively energized from an inactive condition to an active condition to provide a visual light mark representing its active condition, a detector for detecting a predetermined signal as the record tape, upon which the predetermined signal is recorded, is being scanned to produce an actuating signal, a storage device for storing the actuating signal and an energizing circuit for energizing a respective light element, commensurate with the location of the record tape being scanned, with the stored actuating signal so as to provide, upon scanning the record tape, a display of the relative locations of the predetermined signals on the record tape. I further concluded that the limitations in the broadcast claim of said patent, quoted above in paragraph 5, is [sic] not essential for practicing the broad teachings of the invention disclosed in said patent, and I advised Mr. Whitney that, because of this limitation, the scope of the patent was not adequate to protect the invention properly.
>
> 10. I recognized, when I investigated the claims of said patent, that my speculation of the prior art, as hereinabove stated, was unwarranted and erroneous.

These statements in the declarations accompanying the reissue application show that the error relied upon is the attorney's failure to appreciate the full scope of the invention. That error arose because the attorney assumed the presence of features in the prior art that were not there. The board concluded this is not error that may be corrected through reissue because the defect could have been discovered during prosecution of the original patent. The board said. "[t]here may have been a lack of prescience of the existence of a genus but such lack of prescience does not constitute an error in the sense of section 251."

[2] The error provision of 35 USC §251 is to be liberally construed to permit correction of defects. Ball Corp. v. United States, 729 F.2d 1429, 1436, 221 USPQ 289, 294 (Fed. Cir. 1984); In re Oda, 443 F.2d 1200, 1203, 170 USPQ 268, 270 (CCPA 1971). An attorney's failure to appreciate the full scope of the invention is one of the most common sources of defects in patents. The fact that the error could have been discovered at the time of prosecution with a more thorough patentability search or with improved communication between the inventors and the attorney does not, by itself, preclude a patent owner from correcting defects through reissue. In this case, the attorney's error was discovered after commercialization of the invention and issuance of the patent. An application for broader

claims was filed within two years after the original patent issued. Under these circumstances, the attorney's explanation of his error in misunderstanding the scope of the invention is sufficient to satisfy the error requirement of 35 USC §251. We accordingly reverse the board's rejection for failure to allege error correctable through reissue.

[3] The examiner also rejected appellants' application for failure to comply with the requirements of 37 CFR §1.175(a)(5). The board affirmed this rejection without comment. The regulation relied on by the examiner and the board requires:

1.175 *Reissue oath or declaration*

> (a) Applicants for reissue * * * must also file with their applications a statement under oath or declaration as follows:
>
> (5) Particularly specifying the errors relied upon, and how they arose or occurred.

The examiner found that applicants failed to allege facts that explain how the error arose. This finding is clearly erroneous. In re De Blauwe, Appeal No. 84-513, slip op. at 10, 222 USPQ 191 (Fed. Cir. June 8, 1984). The attorney who prosecuted the patent declared that his error, misunderstanding the scope of the invention, arose because no prior art search was done and he assumed limitations were required by the prior art without justification. This, in our view, is a sufficient explanation of how the error arose to satisfy the requirements of 37 CFR §1.175(a)(5).

Disclosure Rejection Of Claims 14-16

[4] The board rejected claims 14-16 for inadequate description to support generic claims that do not require synchronous scanning. The description requirement is found in 35 USC §112 and is separate from the enablement requirement of that provision. In re Bowen, 492 F.2d 859, 864, 181 USPQ 48, 52 (CCPA 1974); In re Smith, 481 F.2d 910, 914-15, 178 USPQ 620, 623-25 (CCPA 1973). It is not necessary that the claimed subject matter be described identically, but the disclosure originally filed must convey to those skilled in the art that applicant had invented the subject matter later claimed. In re Kaslow, 707 F.2d 1366, 1375, 217 USPQ 1089, 1096 (Fed.Cir. 1983). Precisely how close the original description must come to comply with the description requirement of section 112 must be determined on a case by case basis. In re Smith, 458 F.2d 1389, 1395, 173 USPQ 679, 683 (CCPA 1972). We fail to see that the board's finding of inadequate description is clearly erroneous. In re De Blauwe, Appeal No. 84-513, slip op. at 10, 222 USPQ 191 (Fed. Cir. June 8, 1984), and accordingly affirm the board's rejection of claims 14-16.

[5] Appellants admit that the synchronous scanning equipment is the only embodiment of the invention disclosed in the original patent. To overcome the board's decision, appellants' point out that the description of one of the drawings says that dictation apparatus illustrated in the drawing is "one in which the present invention finds ready application." Appellants also note that the title of the patent "Instruction Indicating Apparatus For A Record And/Or Playback Device" is quite broad. The general description of a drawing and the broadly phrased title of the patent demonstrate, appellants contend, that other embodiments are contemplated and are sufficient to satisfy the disclosure requirement. These phrases relied upon by appellants demonstrate a desire to claim the invention as broadly as the prior art would allow. But a desire to claim as broadly as possible is the objective of most applicants for a patent. This subjective desire does not establish that the broader invention being claimed in this reissue application is adequately described in the original patent. The broadly worded title of the original patent and customarily broad description of the drawing do not satisfy the description requirement in this case.

[6] Appellants also rely on statements in the Objects of the Invention section of the specification to satisfy the description requirement. The Objects of the Invention may, in some cases, provide support for claims sought through reissue. In re Handel, 312 F.2d 943, 136 USPQ 460 (CCPA 1963). They do not satisfy the disclosure requirement in this case. For instance, one of the recited objects says:

> [I]t is an object of the present invention to provide improved indicating apparatus for indicating the location of particular information on a record medium which overcomes the aforenoted problems.

The "aforenoted problems" relate to difficulties associated with paper scales graduated in minutes previously used to note the approximate place on a tape where instructions were located. In our view the board correctly read the Objects of the Invention as doing little more than outlining goals appellants hope the

claimed invention achieves and the problems the invention will hopefully ameliorate. But the invention that achieves these general objectives must still be described. Appellants have not shown that the generic invention of claims 14-16 is supported by the original patent's disclosure in such a way as would indicate possession, as of the original filing date, of that generic invention. The present situation is to be distinguished from this court's recent decision in In re Peters, 723 F.2d 891, 221 USPQ 952 (Fed.Cir. 1983), brought to our attention by appellants. In Peters, the appellant successfully rebutted the PTO's rejection by proving that the broadened claims "merely omit an unnecessary limitation [the word "tapered"] that had restricted one element of the invention to the exact and non-critical shape disclosed in the original patent." Id. at 893, 221 USPQ at 953. The court further commented: "Indeed, if the reissue claims had been submitted with the original application, it is difficult to perceive how they could have been properly rejected under §112." Id. at 894, 221 USPQ at 953.

For the foregoing reasons, we *reverse* the board's rejection of claims 1-16 for failure to allege error correctable through reissue and the cause of the error. We *affirm* the board's rejection of claims 14-16 for claiming subject matter not adequately disclosed in the original patent.

Reversed in Part and Affirmed in Part

Footnotes

Footnote * The inquiry into whether the description requirement is met is a question of fact. In re Wertheim, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976); In re Ruschig, 379 F.2d 990, 996, 154 USPQ 118, 123 (CCPA 1967).

- End of Case -

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ABOUT US
Company Overview

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ChemBridge offers an extensive portfolio of advanced discovery chemistry products and contract research services. These include premium quality hand-crafted or parallel-synthesized screening libraries, as well as exclusive customized discovery chemistry research services, which is currently the company's largest and fastest growing business division. In many cases such services are provided by ChemBridge Corporation jointly with ChemBridge Research Laboratories, Inc. (CRL). CRL is our affiliated San Diego based medicinal chemistry research and drug discovery company. CRL/ChemBridge combination provides our clients with the best blend of complementary advantages of both our US and our offshore research sites.

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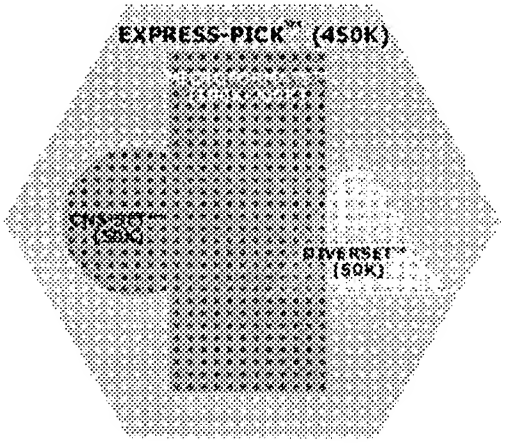

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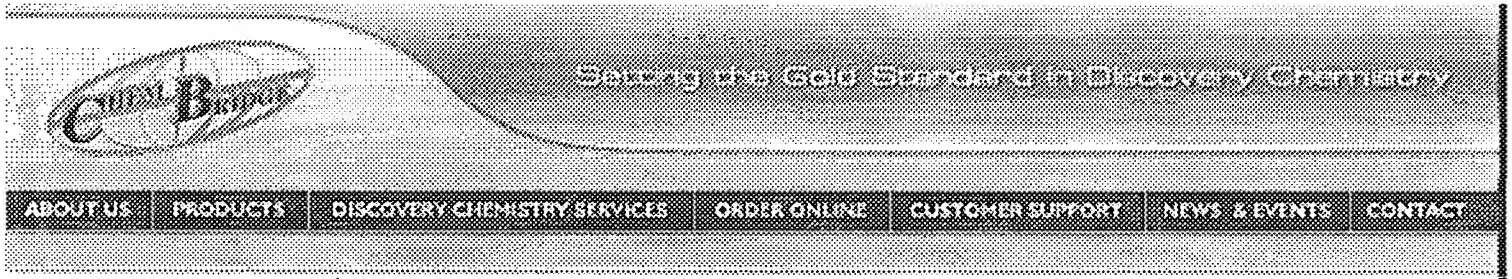

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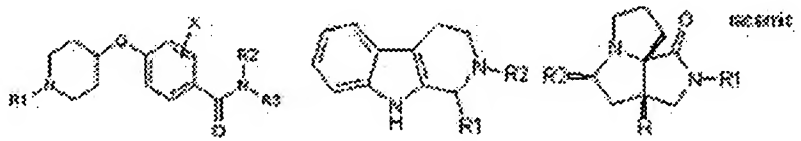
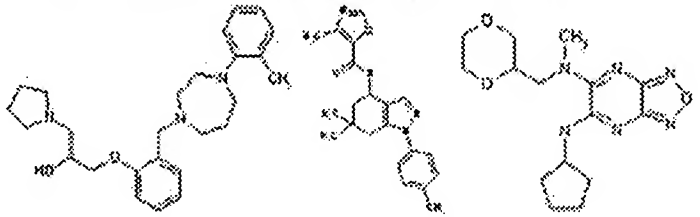


Some examples of final compounds from other templates;



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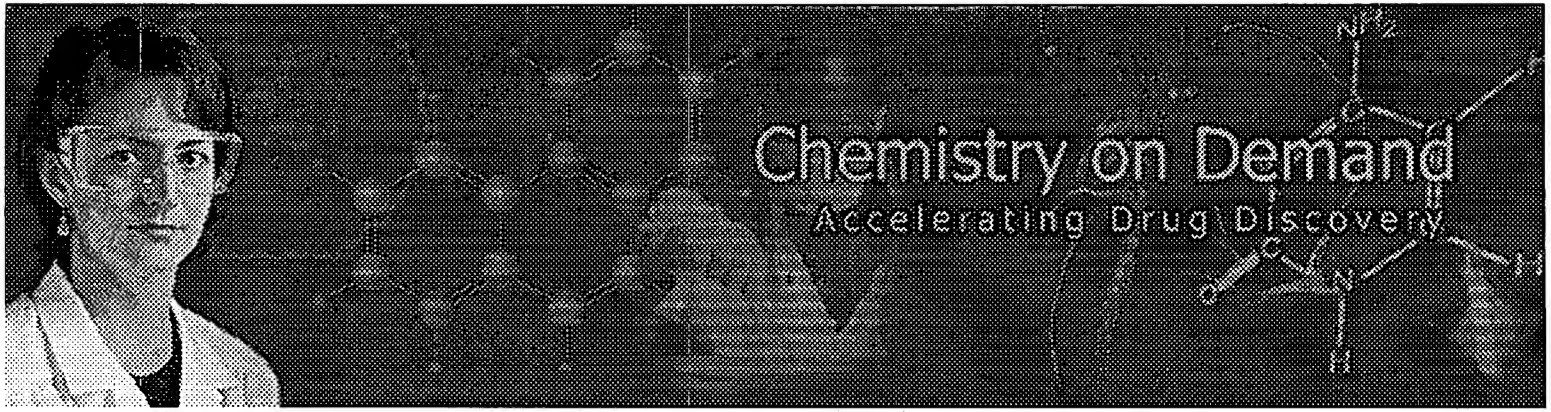

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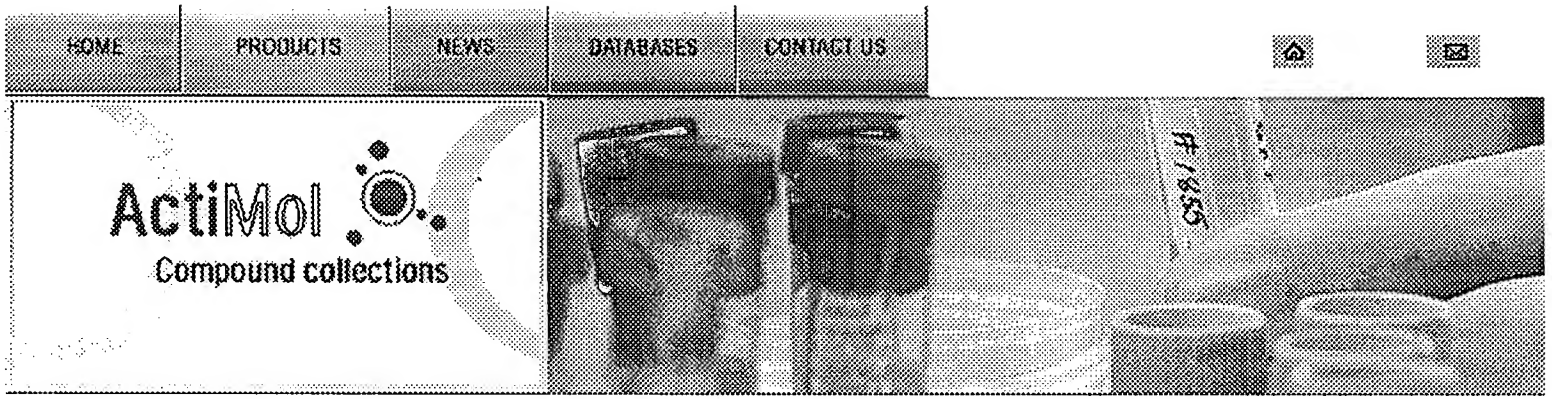

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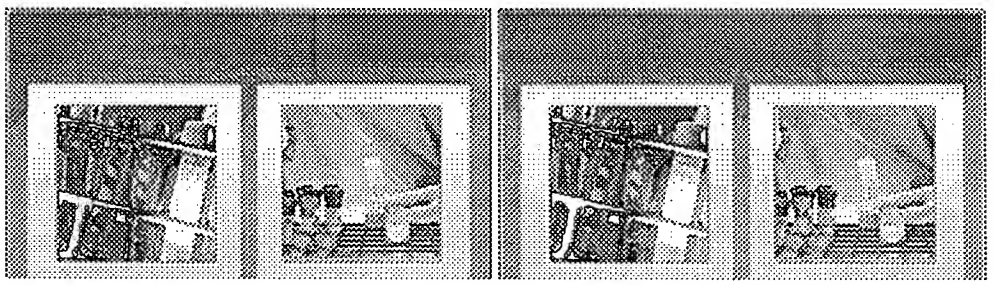

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